Magnesium Chloride for Health and Rejuvenation

A mineral nutrient compound sourced from evaporated sea water, magnesium chloride is treasured for its ability to promote health and vitality, treat numerous diseases, combat the ageing process and fight infections.

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Magnesium is nothing short of a miracle mineral in its healing effect on a wide range of diseases as well as in its ability to rejuvenate the aging body. We know that it is essential for many enzyme reactions, especially in regard to cellular energy production, for the health of the brain and nervous system and also for healthy teeth and bones. However, it may come as a surprise that in the form of magnesium chloride it is also an impressive infection fighter.[1]

The above statement by retired biochemist and nutritionist Walter Last is no exaggeration in summarising the overriding importance of magnesium for our health. It is doubly true because the magnesium intake with our food has greatly declined due to the use of inorganic fertilisers with an oversupply of calcium, and also because the medical profession overemphasises our need for a high calcium intake and excessive calcium supplementation at the expense of magnesium.

While calcium and magnesium work together in the body, they are also opposites in their effects on our metabolism. This is largely due to the activity of the parathyroid glands which try to keep the combined product of calcium and magnesium in our blood steady and balanced against phosphorus. If the magnesium levels are low, then the calcium levels need rise to restore balance. Where does this extra calcium come from? From the bones and teeth, of course!

This is even more of a problem when the parathyroids are chronically overstimulated, usually combined with an underactive thyroid. This is a common situation with the presence of candidiasis, mercury dental fillings and root canal fillings: all of these appear to depress thyroid functions and overstimulate the parathyroids.

What does the body do with the excess calcium in the blood? It dumps it into tissue wherever there is some chronic inflammation. This leads, for instance, to the calcification of joints, as in arthritis, and to the calcification of ovaries and other glands, resulting in declining hormone production. Calcifying kidneys eventually require dialysis, and calcifications in breast tissue, especially the milk ducts, are often managed with unnecessary mastectomies and other invasive treatments.

Magnesium for Healthy Bones and Teeth

Medical authorities claim that the widespread incidence of osteoporosis and tooth decay in western countries can be prevented with a high calcium intake. However, published evidence reveals that the opposite is true.[2] Asian and African populations with a very low intake of about 300 milligrams (mg) of calcium daily have very little incidence of osteoporosis. In Africa, Bantu women with an intake of 200 to 350 mg of calcium daily have the lowest incidence of osteoporosis in the world. In western countries with a high intake

of dairy products, the average calcium intake is about 1,000 mg. The higher the calcium intake, especially in the form of cow's milk products (except butter), the higher the incidence of osteoporosis.[3]

Calcium, magnesium and phosphorus levels are kept in a seesaw balance by the parathyroid hormones. If calcium goes up, magnesium goes down and vice versa. With a low magnesium intake, calcium goes out of the bones to increase the calcium levels in tissues, while a high magnesium intake causes calcium to go out of the tissues and into the bones. A high phosphorus intake without a high calcium or magnesium intake causes calcium to leach from the bones and then leave the body with the urine. A high phosphorus intake with high calcium and magnesium leads to bone mineralisation.

Dr Lewis B. Barnett, an orthopaedic surgeon, practised in two different US counties with very different mineral levels in soil and water. In Dallas County, Texas, with a high calcium and low magnesium concentration in the water supply, osteoporosis and hip fractures were very common, while in Hereford, Texas, with high magnesium and low calcium levels, these were nearly absent. In Dallas County, the magnesium content of bones was 0.5 per cent, while in Hereford it was 1.76 per cent. In another comparison, the magnesium content in bones of osteoporosis sufferers was 0.62 per cent, while in healthy individuals it was 1.26 per cent.[4]

Therefore, to keep calcium in the bones and teeth rather than around the joints and in the soft tissues, we need a steady supply of magnesium.

The same applies for healthy teeth as for healthy bones. In a New Zealand study, it was found that caries-resistant teeth had on average twice the amount of magnesium as caries-prone teeth. The average concentration of magnesium phosphate in bones is given as about 1.0 per cent, in teeth about 1.5 per cent, in elephant tusks 2.0 per cent and in the teeth of carnivorous animals that crush bones it is 5.0 per cent. In regard to the strength of bones and teeth, think of calcium as chalk and magnesium as superglue. The magnesium superglue binds and transforms the chalk into superior bones and teeth.[5]

One patient reported to Walter Last: "My doctor rang Friday afternoon re my bone density scan and wanted to know what I have been doing over the last two years. I asked why, and she said that by looking at the 2005 and 2006 scans, she could see with the 2008 scan that I had improved. She couldn't believe it, and said that normally when you are in the osteoporosis range you don't come out of it."[6] That doctor was actually saying that she knew the accepted treatment of high calcium supplementation does not work but is used anyway. This patient had reversed the medical treatment by lowering calcium and greatly increasing her intake of magnesium (in addition to boron).

Magnesium Absorption and Dosage

A solution to this problem is to lower calcium levels in the blood by keeping up a high intake of magnesium. However, any excess magnesium is quickly lost with the urine. Therefore, to keep calcium in the bones and teeth rather than around the joints and in the soft tissues, we need a steady supply of magnesium.

Traditionally, magnesium in our diet has been mainly in ionic form and is converted in the stomach into magnesium chloride or it binds to protein, especially chlorophyll, and then is broken down, ending up for absorption as magnesium chloride or chelated magnesium. Therefore, when supplementing, we may as well use magnesium chloride directly instead of magnesium oxide or hydroxide and other forms that require additional hydrochloric acid.

Magnesium chloride has another advantage: it provides ions of magnesium and chloride which are both required to stimulate the activity of digestive enzymes and produce hydrochloric acid in the stomach.

Magnesium sulphate, also known as Epsom salts, is poorly absorbed and therefore attracts water in the colon and functions as a laxative.

If fruit and vegetables are grown in mineral-rich soil, then these foods contain a high content of minerals, including magnesium. As the plant grows, it converts the inorganic minerals into organic minerals and these then bind to acids like citric acid and are easily absorbed in this form. While most forms of magnesium have a good bioavailability, chelates with amino acids and magnesium bound to fruit acids also have a beneficial alkalising effect on the body.

The efficiency of magnesium absorption varies inversely with the quantity of magnesium intake. Magnesium is absorbed into the body primarily from the ileum of the small intestine. When consuming the RDI (Recommended Dietary Intake) of magnesium, which is an average of between 360 and 410 mg a day, we absorb approximately 50 per cent of magnesium, but when ingesting sub-optimal quantities we may absorb as much as 75 per cent. Absorption decreases rapidly when more than 200 mg is consumed at one time, therefore it's important to take magnesium in divided doses throughout the day.

Magnesium chloride can be added to food or drink, like juice, mostly to disguise the salty-bitter taste. I mix it with juice myself, a quarter of a teaspoon at a time, and it is fine. However, it's a matter of personal preference. You can start with a few drops in your meal or drink and slowly build up to half a teaspoon twice a day—amounting to 600 mg of magnesium chloride daily.

When dealing with factors such as stress, advancing age, cardiovascular problems and signs of calcification, up to 1,000 mg is the daily dosage recommended by many health practitioners. The intestinal absorption of magnesium declines with ageing and the presence of gastrointestinal disorders, and especially with dysbiosis caused by antibiotics and other pharmaceutical drugs. Excessive loss of magnesium in urine can also be a side effect of some pharmaceuticals.[7]

A study published in 2005 showed that over two-thirds of Americans do not consume even the low level of the RDI of magnesium, and 19 per cent use less than one-half of this.[8] It may take up to three months or longer of oral magnesium supplementation to replenish intracellular magnesium status, and according to Dr Norm Shealy it can take up to a year.[9]

"Magnesium Oil" in Transdermal Therapy

All these problems make it more attractive to use magnesium chloride transdermally (absorbed through the skin), bypassing the digestive system with the need for hydrochloric acid and a well-functioning digestive tract.

Magnesium chloride consists of 11.8 per cent magnesium bound to 88.2 per cent chloride. It is produced through evaporation from saline waters, mainly sea water (and also from the Dead Sea). After removal of sodium chloride, the bittern remains, containing mainly magnesium chloride and magnesium sulphate.[10] Magnesium chloride is much less bitter than magnesium sulphate.

In the dry form, magnesium chloride is usually sold as white hygroscopic (water-attracting) flakes, hydrated with six molecules of water (hexahydrate) for each unit of magnesium along with two chloride ions ($MgCl_2$). This affinity with water means that magnesium chloride can be used as a product called "magnesium oil", which can be applied to the skin as a transdermal magnesium therapy. It is not oil in the true sense, but has the feel of oil when rubbed on the skin.

Over a cup of lemongrass tea with Walter Last, I first heard about magnesium chloride used as magnesium oil and described in much detail in the book *Transdermal Magnesium Therapy* by Mark Sircus. As a health supplement, it is safe to take internally or externally. Mark Sircus writes:

> *Magnesium chloride solution is not only harmless for tissue, but it had also a great effect over leucocytosis; so it was perfect for external wound treatment.*[11]

Rejuvenation by ingesting more magnesium is a slow process, especially as the amount of magnesium that we can take is limited by its laxative effect and the need to keep it in a reasonable balance with the calcium and phosphorus intake. The other problem is that spastic muscles have poor blood and lymph circulation, which makes it difficult for ingested magnesium to dissolve and flush out the tissue and joint calcifications. These problems then call for the use of magnesium oil.

We can greatly speed up the rejuvenation process by increasing the circulation through permanently contracted muscles by using magnesium oil with deep tissue massage or just frequent rubbing, or by using it in hot packs. However, we need to be careful with sensitive skin, as the magnesium oil may sting for a while. In this case, it's best to dilute it to an acceptable level. If rubbed on in a rather diluted form, it may gradually disappear into the skin, but in concentrated form it just remains sticky and needs to be washed or showered off after some time. However, with many conditions, such as arthritis and other forms of stiffness and pain, it's a good idea to apply it to the affected area and cover it with some old cloths overnight.

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Antimicrobial Action of Magnesium

Magnesium chloride is a great infection fighter as well, which no other magnesium combination can claim to be.

The first prominent researcher to investigate and promote the antibiotic effects of magnesium was a French surgeon, Professor Pierre Delbet, MD.[12] In 1915, he was looking for a solution to cleanse soldiers' wounds because he found that traditionally used antiseptics actually damaged tissues and encouraged infections instead of preventing them. In all his tests, magnesium chloride solution was by far the best. He found that not only was it harmless for tissues, but it also greatly increased leucocyte activity and phagocytosis, the destruction of pathogenic microbes.

Later, Professor Delbet performed experiments with the internal application of magnesium chloride and found it to be a powerful immune system stimulant. In his experiments, phagocytosis increased by up to 333 per cent. This means that after magnesium chloride intake, the same number of white blood cells destroyed up to three times more microbes than before.

Gradually, Professor Delbet found magnesium chloride to be beneficial in treating a wide range of diseases. These included: diseases of the digestive tract such as colitis and gall bladder problems; Parkinson's disease, tremors and muscle cramps; acne, eczema, psoriasis, warts and itching skin; impotence, prostatic hypertrophy, cerebral and circulatory problems; and asthma, hay fever, urticaria and anaphylactic reactions. Hair and nails became stronger and healthier, and patients had more energy.

Professor Delbet also found that magnesium chloride had a very good preventive effect against cancer and cured precancerous conditions such as leukoplasia, hyperkeratosis and chronic mastitis. Epidemiological studies confirmed that regions with magnesium-rich soil had less cancer than those with low magnesium levels.

Professor Delbet used to give magnesium chloride solution routinely to his patients with infections and for several days before any planned surgery, and he was surprised that many of these patients experienced euphoria and bursts of energy. Magnesium chloride supposedly has a specific action on the tetanus virus and its effects on the body. It even seems to be protective against snake bites. Guinea pigs did not die after normally lethal injections of snake venom and a rabbit survived a poisonous snakebite when given magnesium chloride solution.

Another French doctor, Dr A. Neveu,[13] cured several diphtheria patients with magnesium chloride within two days. He also published 15 cases of poliomyelitis that was cured within days if treatment was started immediately or within months if paralysis had already progressed. Dr Neveu found magnesium chloride effective against asthma, bronchitis, pneumonia, emphysema, pharyngitis, tonsillitis, hoarseness, common cold, influenza, whooping cough, measles, rubella, mumps, scarlet fever, poisoning, gastroenteritis, boils, abscesses, whitlow, infected wounds and osteomyelitis.

In more recent years, Raul Vergini, MD and others confirmed these earlier results and added more illnesses and conditions to the list of successful uses of magnesium chloride: acute asthma attack, shock, tetanus, herpes zoster, acute and chronic conjunctivitis, optic neuritis, rheumatic diseases, many allergic diseases and chronic fatigue syndrome. They also found it to have beneficial effects in cancer therapy. In all of these cases, magnesium chloride gave much better results than other magnesium compounds.[14]

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Magnesium for Nerves

Magnesium has a calming effect on the nervous system, so it is frequently used to promote good sleep. It can also be used to calm irritated and overexcited nerves. This is especially useful with epileptic seizures, convulsions in pregnant women and the "shakes" in alcoholics. Magnesium levels are generally low in alcoholics, contributing to or causing many of their health problems. If magnesium levels are low, the nerves lose control over muscle activity, respiration and mental processes. Nervous fatigue, tics and twitches, tremors, irritability, hypersensitivity, muscle spasms, restlessness, anxiety, confusion, disorientation and irregular heartbeat all respond to increased magnesium intake. A common phenomenon of magnesium deficiency is a sharp muscle reaction to an unexpected, loud noise. "Memory pills" have been marketed that consist mainly of magnesium.[15]

Sleep in magnesium deficiency is restless and agitated and is disturbed by frequent night-time awakenings. However, all forms of magnesium are not equally effective. In a study of more than 200 patients, Dr W. Davis used magnesium chloride as a possible means of combatting insomnia. The researcher reported that sleep was induced rapidly and was uninterrupted, and that waking tiredness disappeared in 99 per cent of the patients. In addition, anxiety and tension diminished during the day.[16]

Many of the symptoms of Parkinson's disease can be overcome with high magnesium supplementation; shaking can be prevented and rigidity eased. With pre-eclampsia, pregnant women may develop convulsions, nausea, dizziness and headaches; in hospitals, this is treated with magnesium infusions. Because of its strongly relaxing effect, magnesium helps not only in promoting better sleep but is also useful in overcoming headaches and migraines. Even the number of suicides is linked with magnesium deficiency: the lower the magnesium content in soil and water in a given region, the higher the suicide rate.[17]

Epilepsy is marked by abnormally low magnesium levels in the blood, spinal fluid and brain, causing hyperexcitability in regions of the brain. There are many reported cases of epilepsy greatly improving or disappearing with magnesium supplementation. In a trial with 30 epileptics, 450 mg of magnesium supplied daily successfully controlled their seizures. Another study found that the lower the magnesium blood level, the more severe was the epilepsy. Magnesium works best combined with vitamin B6 and zinc. In sufficient concentrations, magnesium inhibits convulsions by limiting or slowing the spread of the electric discharge from an isolated group of brain cells to the rest of the brain. Even the initial burst of firing nerve cells that starts an epileptic attack can be suppressed with magnesium.[18]

Magnesium for Rejuvenation

Calcium and magnesium are opposites in their effects on our body structure. As a general rule, the softer our body structure, the more we need calcium; the more rigid and inflexible it is, the less calcium and the more magnesium we need. Magnesium can reverse the age-related degenerative calcification of our body structure and, with this, help us to rejuvenate. Walter Last calls magnesium "the mineral for rejuvenation".

Young women, children and, most of all, babies have soft body structures and smooth skin, with low calcium and high magnesium levels in their cells and soft tissues. They generally need high calcium intakes. This is the biochemistry of youth. As we age, we become more and more inflexible; this is most pronounced in old men and post-menopausal women. The arteries harden to cause arteriosclerosis; the skeletal system calcifies to cause rigidity, with fusion of the spine and joints; kidneys and other organs and glands increasingly calcify and harden, with stone formation; calcification in the eyes causes cataracts; and even the skin hardens, becoming tough and wrinkled. In this way, calcium is in the same league as oxygen and free radicals, while magnesium works together with hydrogen and the antioxidants to keep the body structure soft.

While a higher magnesium intake is beneficial for most individuals, those with low blood pressure usually require more calcium. Normal blood pressure is about 120/80; the lower it is, the higher should be the daily intake of calcium. While those with high blood pressure may benefit from ingesting up to twice as much magnesium as calcium, those with low blood pressure may take twice as much calcium as magnesium, but both minerals in relatively high amounts. Those with low blood pressure and a tendency towards inflammation may also reduce their intake of phosphorus.

A gynaecologist reported that some of the first organs to calcify are the ovaries, leading to premenstrual tension. When he put his patients on a high magnesium intake, their PMT vanished and they felt and looked much younger. Most of these women said that they lost weight, increased their energy, felt less depressed and enjoyed sex again much more than before. For men, magnesium is equally beneficial for problems arising from an enlarged prostate gland. Symptoms commonly improve after a period of supplementation with magnesium chloride.[19]

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Other Health Benefits

We see how essential magnesium is to the normal function of the cardiovascular and nervous systems as well as in over 300 enzyme reactions and in energy production. According to Mark Sircus:

Magnesium is the single most important mineral for maintaining proper electrical balance and facilitating smooth metabolism in cells. Magnesium is the second most abundant intracellular and the fourth most abundant cation (positively charged ion) in the body. It is a transmembrane and intracellular modulator of cellular electrical activity. As such, a deficiency in the body is nothing short of disastrous for the cell's life. Yet, this fact is not widely known.[20]

And is it not at the cellular level that health and disease start?

Sircus also says: "Without magnesium there is no energy, no movement, no life."[21]

In practice, I often use the help of a reference software program called Hyperhealth (the definitive database for natural medicine based on published scientific research; see http://www.hyperhealth.com). It lists the health benefits that magnesium exerts on the different body systems, including the cardiovascular and nervous systems (as already stated) and the digestive, respiratory, excretory, lymphatic/immune, musculoskeletal, respiratory and reproductive systems, as well as on energy production. It mentions magnesium's positive influence on metabolism such as in control of weight, blood sugar and cholesterol, and states that magnesium is needed for protein, starch and fat metabolism and is important in liver, thyroid and parathyroid function. It even lists benefits in hearing, vision and oral health.

The pathologies associated with magnesium deficiency are staggering: hypertension and other cardiovascular diseases, kidney and liver damage, migraine, multiple sclerosis, glaucoma, Alzheimer's disease, recurrent bacterial infections, fungal infections, premenstrual syndrome, calcium and potassium deficiency, diabetes, cramps, muscle weakness, impotence, aggression, fibromas, hearing loss and iron accumulation.[22]

Increased magnesium intake helps to prevent or dissolve kidney stones and gall bladder stones.[23] Activation of digestive enzymes and bile production as well as improvement of intestinal flora health are factors that make magnesium chloride beneficial in normalising digestive processes and reducing digestive discomfort, bloating and offensive stool odours. It actually reduces all offensive body odours, including underarm and foot odour. This may explain why chlorophyll is generally very effective in reducing body odour, as it is high in magnesium.

I'd like to share some of my own clinical experiences with magnesium oil. I treated a patient with diet and supplements while she decreased her intake of anti-depressant drugs. She improved but still had a big problem with insomnia. Doing relaxation exercises and having a foot bath with added magnesium oil every night made her fall asleep while still soaking her feet! Another client, after using magnesium oil for the first time, slept through the night without waking up with leg cramps. She also took magnesium chloride orally (note that as it is

salty-bitter in taste, it is best taken mixed with juice).

Two friends of mine, after soaking their feet a few times, experienced a slight metallic taste in the throat. This can be interpreted as a sign of magnesium absorption into the system. Another person told me of dreaming much more than usual and waking up feeling refreshed after using magnesium oil. A colleague of mine reduced sun damage to his skin by applying magnesium oil. He recommended it to his clients and many had similar reports about their sun spots.

Some words of caution... Magnesium supplementation should be avoided if you have severe kidney problems (e.g., when on dialysis with severe renal insufficiency), and also with myasthenia gravis. Check your status with a medical professional. Be careful with severe adrenal weakness or with low blood pressure. Too much magnesium can cause muscle weakness; if this happens, temporarily use more calcium. ∞

Endnotes

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